



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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January 9, 2002

Dirk Kempthorne, Governor
C. Stephen Allred, Director

Ms. Kathleen Hain, Manager
Environmental Restoration Program
Idaho Operations Office
U.S. Department of Energy
850 Energy Drive
Idaho Falls, Idaho 83401-1563

RE: Remedial Action Report for WAG 5 OU 5-12 Phase I Remedial Action;
Sites ARA-02, ARA-16, ARA-25, and Inactive Waste System Sites - ARA-07,
ARA-08, ARA-13, and ARA-21 (Draft Final)

Dear Ms. Hain:

The Idaho Department of Environmental Quality (DEQ) has completed its review of the above-referenced document, and provides the attached general and specific comments to the resolution comments provided by U.S. DOE, Idaho. DEQ received the document on December 24, 2001.

We look forward to working with your staff to address these comments. If you have any questions regarding these comments, please contact me at (208) 373-0217.

Sincerely,

Ted Livieratos
WAG 5 Project Manager
State Office of Technical Services

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Attachment

cc: Carol Hathaway, DOE
Rick Poeton, EPA Region 10
Daryl Koch, DEQ-WM&RD
CERCLA Source File
COF

State of Idaho
Department of Environmental Quality

General Comments

1. **Comment:** A list or table would be useful to indicate the sites that are subject to Institutional Controls (ICs). For example, if the contamination from the Auxiliary Reactor Area (ARA)-25 was "chased" all the way to the basalt interface, but could not be removed from the basalt, this fact noted in a table or list would be helpful. This information is also valuable as part of the IC. A sign could be placed in the area stating that radioactive contamination is located 15 feet below ground surface. Future deed restrictions and other users could easily be able to obtain information about the site from the table.
- Resolution:** A new Section 7.4 has been added discussing whether institutional controls will be required at any of the sites. In addition, a new Section 7.3 provides summary information that ties to Section 7.4, summarizing the results of the remedial action that lead to either the need, or lack thereof, for institutional controls.
- Resolution Comment:** The Second Paragraph of 7.4.1 references the ARA-16 site; this should be the ARA-02 site. The data in Figure 2.2 should be discussed somewhere in the document (i.e., where Figure 2.2 is referenced on Page 2-5) with an explanation as to what the field screen results (pCi/g) indicate. This would be helpful because there are several instances where these results exceed the 0.36 ± 0.013 maximum that was measured by the portable germanium spectrometer. There is a statement on Page 2-5 that states: "Although Cs-137 concentrations in certain field screening soil samples were in excess of 23 pCi/g, further investigation in the field revealed that the activity was associated with surficial soils that were contaminated as a result of the SL-1 accident in 1961, as evidenced by the vegetation in the soil." Please clarify the "further investigation" that was performed. Explain if samples were taken from vegetation, and what the results from the analysis were, or if field instrumentation was utilized.
2. **Comment:** Data regarding the radionuclide analysis of the liquids from the ARA-16 sludge removal activity should also be in the RA Report. This information will be necessary to ensure that the waste acceptance criteria (WAC) for the Idaho National Engineering and Environmental Laboratory (INEEL) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Disposal Facility (ICDF) is met.
- Resolution:** These data have been provided in Appendix C, Page C-10, and have been discussed in Section 2.4.3.
- Resolution Comment:** The data in Appendix C, Page C-10 is for the liquid that was in the tank prior to removal. Please provide clarification in the RA Report if any sampling and analysis was performed during, or after, the removal of liquid and sludge from the tank (other than the VOC data for the drum liquids on page C-11). Since radiological data will be required to meet the WAC for the ICDF, please state if the ARA-16 FY 2001 liquid, radiological data (Page C-10) will be used for the WAC in the RA Report. The problem here is that the liquid data on Page C-10 is a result of both the sludge and liquid that were in the tank prior to removal, separation, and filtration. It is likely that the "hottest" components of the radionuclides are in the sludge, and most of the VOCs are in the filter. The VOC results for the stabilized drums prove this; however, the radiological content of the drums is unknown.

3. **Comment:** There is only one picture for the ARA-08 and the ARA-21 remedial activities. The other sites have many pictures that show the progress of the events from practically the beginning to the end. If it is possible, please include any additional photographs that may exist for these two sites as well.
- Resolution:** Unfortunately, only a few progress pictures were taken at these two sites. For ARA-08, a second picture exists of basically the same excavation activity taken from a different angle. For ARA-21, there are a couple of other pictures that still only show the sampling, again from a different angle. The two pictures included in the RA Report for these two sites are thought to be the best for the activities taking place.

Resolution Comment: OK.

Specific Comments

1. **Section 1.1, Page 1-2, General**

- Comment:** From the Remedial Action Report (OSWER Directive 9355.0-39FS):
- “The Performance Standards and Construction Quality Control is probably the most important section of the Remedial Action Report. Performance Standards are the criteria or requirements that the remedial action contractor met in completing the project. Performance Standards include cleanup levels, quality criteria, and other substantive requirements, or limitations found in the Record of Decision. Each Performance Standard should be addressed by providing the standard, the maximum level permissible, the results of field sampling, the basis for the determination that the standard was met (except for Long Term Remedial Actions), and the location and frequency of the tests.
- This section of the Remedial Action Report should also provide a summary of the implementation of the construction quality control plan and provide an assurance that the remedial action is complete. A table should be included that lists the types of samples taken and provides a comparison of test results with the specified standards to be achieved by the remedial action.”
- Almost all of these requirements have been addressed in different sections throughout the document, without having a specific section that addresses Performance Standards and Construction Quality Control. The inclusion of a table that lists the samples taken and provides a comparison of test results, with the specified standards that were achieved by the remedial activities, would enhance the document and allow the reviewer to easily see if remediation goals and objectives have been met.
- Resolution:** A new Section 7.3 has been added that provides a discussion of the remedial action objectives, as compared to the results.

Resolution Comment: OK.

2. **Section 1.3.4.1, Page 1-10, Last Paragraph**

- Comment:** An underground waste detection tank (ARA-719) is mentioned. Please provide a brief explanation of this tank and the current status (active site, removed tank, investigated but not a site, etc.).
- Resolution:** Actually, the tank was a detention tank rather than a detection tank. This verbage has been corrected in the narrative, and an explanation added that the tank was removed during previous D&D activities.

Resolution Comment: OK.

3. Section 2.3.2.1, Page 2-5, Third And Fourth Paragraphs

Comment: In the third paragraph, please provide an explanation as to why the surface soil ARA-23 Phase II remediation goal of 23 pCi/g for Cs-137 was used. The Record of Decision (ROD) states that the remediation goal of 8.5 pCi/g for Cs-137 is for the ARA-02 seepage pit sludge because all contaminants of concern (COCs) at the site are contained within the sludge. It further states that remediation goals can be satisfied by either cleaning up the identified contaminant concentration (Table 22-8.5 pCi/g for Cs-137), or by removing all contaminated media down to the basalt interface. The ROD does not differentiate between ARA-02 soils and the seepage pit sludge. The fourth paragraph states that soils underlying the ARA-02 seepage pit were field screened to verify that the concentration of Cs-137 was less than the 8.5 pCi/g remediation goal. A reason should be provided to justify what was performed at the site.

Resolution: Clarification has been added to Paragraph 3 stating that the surficial soil contaminated is attributed to windblown contamination associated with the ARA-23 site.

Resolution Comment: Addressed in General Resolution Comment Number 1.

4. Section 2.3.2.2, Page 2-5, First Paragraph, Last Sentence

Comment: To the reader that is not familiar with INEEL procedures regarding radiological control, it would be helpful to provide further explanation of this event. Please provide information on how the "hot particle" was disposed of. This could be accomplished by briefly stating the INEEL procedure that was used.

Resolution: The particle was disposed as radiologically-contaminated waste. The INEEL Radiation Protection Manual has been referenced as the approved procedure.

Resolution Comment: OK.

5. Section 2.3.2.3, Page 2-6, First Paragraph, Fourth Sentence

Comment: Please state the Idaho Administrative Procedure Act (IDAPA) standard that was used. For example, IDAPA 58.01.03.007 governs the abandonment of septic tanks. The abandonment of seepage pits, septic tanks, and leach pits/fields are mentioned throughout the report as being accomplished in accordance with IDAPA standards and Resource Conservation and Recovery Act (RCRA) regulations. It would improve the document to list the specific regulation, or provide it in the reference section.

Resolution: The specific IDAPA standard has been referenced in this section and provided in the reference section as well.

Resolution Comment: OK.

6. Section 2.3.2.4, Page 2-9, Second To The Last Sentence

Comment: Please state how the components that were left in the ground were surveyed for radiological contamination and not the results, or provide them in Appendix C.

Resolution: Clarification has been added to this section.

Resolution Comment: OK.

7. Section 2.3.2.4, Page 2-9, Last Two Sentences

Comment: See Comment Number 5 regarding IDAPA and RCRA regulations.

Resolution: Resolved as per Comment Number 5.

Resolution Comment: OK.

8. **Section 2.3.2.5, Page 2-15, Eighth Paragraph**

Comment: The current status of the Allied Technology Group, Inc. should be incorporated into this section. It now appears that an alternative treatment for the waste will have to be identified.

Resolution: Clarification has been added to this section stating that the viability of ATG is in question, and alternatives are being investigated.

Resolution Comment: OK.

9. **Section 2.3.2.5, Page 2-16, Last Sentence**

Comment: See Comment Number 5 regarding IDAPA and RCRA regulations.

Resolution: Resolved as per Comment Number 5.

Resolution Comment: OK.

10. **Section 2.4.2, Page 2-17, First Paragraph**

Comment: See Comment Number 5 regarding IDAPA and RCRA regulations.

Resolution: Resolved as per Comment Number 5.

Resolution Comment: OK.

11. **Section 2.4.3, Page 2-18, Third Bullet**

Comment: Please provide a brief synopsis of the results from the radiological and volatile organic compound (VOC) field screening of all excavations and excavated and layback soils.

Resolution: A summary of the field screening results has been provided.

Resolution Comment: OK.

12. **Section 2.4.3, Page 2-18, Seventh Bullet**

Comment: Please provide a brief synopsis of the results from the sampling from the decontamination fluid storage container (or place in Appendix C).

Resolution: This bullet was in error and has been deleted. Decontamination of the tank was performed by rinsing with clean water. The rinsate water was added to the dewatering high-integrity container and subsequently filtered/containerized for disposal with the waste water removed from the tank.

Resolution Comment: OK.

13. **Section 2.4.4, Page 2-19, First Paragraph**

Comment: See Comment Number 5 regarding IDAPA and RCRA regulations.

Resolution: Resolved as per Comment Number 5.

Resolution Comment: OK.

14. Section 3, Page 3-1, First Paragraph

Comment: Please state if there is additional funding to cover the other waste currently in storage (Carbon filter, ARA-02 polychlorinated biphenyl waste, etc.). Indicate if the \$25,000 is included in the total cost table.

Resolution: The table has been revised to include the \$125,000 estimated disposal cost for the ARA-16 sludge, as well as the funding committed for completion of the Phase I activities, including disposal of the stored wastes (i.e., carbon filter, ARA-02 sludge). There are currently no funds committed for disposal of the ARA-16 sludge. Once a treatment and disposal facility is identified for the sludge, the scope will be added to the project's work plan, and funding identified for the task.

Resolution Comment: OK.

15. Section 4, Page 4-1, First Paragraph, First Sentence

Comment: Please replace the June 2000 Work Plan listed in the reference with the June 2001 Revision 1. The work that was accomplished is reflected better in the later version.

Resolution: The reference has been updated throughout the document.

Resolution Comment: OK.

16. Section 4, Page 4-1, Fourth Bullet

Comment: Please reword sentence to state that dewatered sludge is being temporarily stored in the CERCLA storage unit, located at the ARA-I facility, until appropriate treatment can be established.

Resolution: The sentence has been reworded as suggested, with the addition of "disposal" to the phrase.

Resolution Comment: OK.

17. Section 4, Page 4-1, Third Paragraph, Fifth Sentence

Comment: Please add "applicable federal and state regulations" to the statement that waste currently in storage will be managed in accordance with INEEL resident procedures.

Resolution: The phrase has been added as suggested.

Resolution Comment: OK.

18. Section 5.2, Page 5-1, Second Paragraph, Second Sentence

Comment: Please mention the other waste streams that were stored in the CERCLA storage area besides the ARA-16 tank sludge.

Resolution: Clarification has been added summarizing the additional wastes being stored in the area.

Resolution Comment: OK.

19. Table 5-1, General Comment

Comment: Please list the disposal dates for the wastes in the table. This would be helpful to the reviewer because there were several items from different waste streams that were remaining on the CERCLA storage unit at the time of the pre-final inspection.

- Resolution:** Disposal/shipping dates have been added to the table.
Resolution Comment: OK.
20. **Table 5-1, Page 5-2, First Item**
Comment: The ROD states that there were eight drums that could not be accepted by Waste Experimental Reduction Facility (WERF) because of PCB concentrations regulated by the Toxic Substances Control Act (TSCA). If these are part of seven listed in the table, please state the disposition path of the eighth drum.
Resolution: The seven drums listed here are from the seepage pit sludge. The eight drums listed in the ROD are from the ARA-02 Septic Tank #2 and are part of the Phase II activities; therefore, they are not included in this table which is specific to Phase I activities.
Resolution Comment: Please check to ensure the ARA-02 Septic Tank #2 waste is addressed in the Phase II work plan.
21. **Section 5.3.1, Page 5-4**
Comment: Please include the septic tank and manholes as part of the waste generated.
Resolution: The paragraph has been revised to include all wastes generated during the remedial activity, including the septic tank and manholes.
Resolution Comment: OK.
22. **Section 5.3.1, Page 5-4**
Comment: The date in Table 5-1 is November for the box of debris. (Please provide an update for all the timelines in the final submittal of the RA Report).
Resolution: Disposal/shipping dates have been updated throughout the document.
Resolution Comment: OK.
23. **Section 5.3.4, Page 5-4**
Comment: Please add the verbiage, "tops of the septic system" following concrete debris.
Resolution: Added "tops of the septic tank and the manhole," as this was the waste actually disposed.
Resolution Comment: OK.
24. **Section 5.3.5, Page 5-4**
Comment: Please include an explanation of what happened to the HEPA filters that were used during the remedial actions at ARA-16.
Resolution: The fate of the HEPA filters has been clarified in this section. Currently, another project is considering using the filters. If not, the filters will be disposed appropriately.
Resolution Comment: OK.
25. **Section 5.3.7, Page 5-5**
Comment: Please include the disposition of the temporary hot cell roof.
Resolution: A description of the disposition of the roof has been added to this section.
Resolution Comment: OK.

26. Section 6, Page 6-1, First Bullet

Comment: Please add the carbon filter.

Resolution: The carbon filter has been added to the bulleted list.

Resolution Comment: OK.

27. Section 6, Page 6-1, Fourth Bullet

Comment: Please add TSCA regulated PCBs to the distribution box sludge.

Resolution: The phrase has been added, as suggested.

Resolution Comment: OK.

28. Section 6, Page 6-1, Fifth Bullet

Comment: Please add ARA-02 debris to the lead rings.

Resolution: The phrase has been added, as suggested.

Resolution Comment: OK.

29. Section 6, Page 6-1, Between Seventh And Eighth Bullet

Comment: Please add a bullet for task site demobilization.

Resolution: A bullet for task site demobilization has been added.

Resolution Comment: OK.

30. Section 6, Page 6-1, Additional Bullet

Comment: Please provide a bullet for annual inspection of ICs.

Resolution: A bullet for annual inspection of ICs has been added.

Resolution Comment: OK.

31. Section 6, Page 6-1, Additional Bullet

Comment: Please add a bullet for the sampling and analysis of the carbon filter unit.

Resolution: A bullet has been added. To note, sampling has been completing and the project is currently awaiting submittal of analytical results.

Resolution Comment: OK.

32. Section 6, Page 6-1, Second Paragraph, Fifth Sentence

Comment: This sentence states that the ARA-02 sludge is still in storage at the CERCLA waste storage unit. The table states that it was disposed of at Envirocare. There may be a discrepancy between seepage pit sludge and the septic tank sludge. Please provide clarification.

Resolution: The sludge listed in the table was from the seepage pit; whereas, the sludge discussed here is from the ARA-02 Septic Tank #2. Clarification to this effect has been added.

Resolution Comment: OK.

33. Section 7.1, Page 7-1

Comment: See Comment Number 5 regarding IDAPA and RCRA regulations.

Resolution: Resolved as per Comment Number 5.

Resolution Comment: OK.

34. Section 7.1, Page 7-2, Fifth Bullet

Comment: Please indicate if the results from contaminated soil that were sampled are the same as those on Page C-12 of Appendix C. Specify if they were disposed of at the Radioactive Waste Management Complex (RWMC).

Resolution: A parenthetical reference to Appendix C, Page C-12, has been added, and the fact that the soils were disposed at the RWMC has been indicated.

Resolution Comment: OK.

35. Section 7.2, Page 7-2

Comment: Please change the reference to the 2000 Work Plan so it reflects the 2001 Work Plan.

Resolution: References to the Work Plan have been corrected throughout the document to reflect the 2001 revision.

Resolution Comment: OK.

36. Section 8, Page 8-1

Comment: There was a discussion during the pre-final inspection that mentioned the fact that although remedial action objectives (RAOs) and remedial action goals were met, if contamination was left in place, there would still be some residual risk (although less than what was stated in the ROD). This risk, in the case of Cs-137, would be further reduced in the 100-year timeframe. In the Operations and Maintenance Plan (December 2000), it is stated that: "ICs would not be required after remediation if all contaminated media are removed or if contaminant concentrations are comparable to local background values." For example, if the radiological survey of the ARA-13 system components left in place met RAOs and remediation goals, but were above local background values, then ARA-13 should be added to the Operation and Maintenance Plan for ICs. Please provide a discussion to this effect for the sites that are not listed for ICs.

Resolution: An entire new section (Section 7.4) devoted to a discussion of institutional controls, as they pertain to the Phase I sites. This discussion addresses the fact that controls will be required for the ARA-25 remediation site due to the concentrations of contaminants remaining at the site, even though the remediation goals, as prescribed by the ROD, were met. Furthermore, the discussion extends to the fact that institutional controls will be required at two of the four septic system closure sites (i.e., ARA-07 and ARA-08), due to the fact that Cs-137 contamination remains at the sites above the levels required for free release, under the current scenario. When Phase II activities, institutional controls as they pertain to the Phase II sites, as well as all the WAG 5 sites will be discussed and the Operations and Maintenance Plan updated to reflect the necessary changes in controls.

Resolution Comment: OK, add ARA-07 and ARA-08 to the Section 8 discussion about institutional controls for ARA-02, ARA-16, and ARA-25.

37. Appendix A, Page A-3

Comment: There is a pipe to an evaporation pond listed on the drawing of ARA-02. Please provide information as to the status of this pipe in the notes section. State if it was investigated as part of the RI and is part of another site, or if it is abandoned in place and not a site, etc.

Resolution: The drawing has been updated to reflect that this pipe was removed and disposed at Envirocare during the ARA-02 remedial action, with a notation made next to the pipe in the drawing. The pipe indeed ran to the ARA-01 Pond and was removed, more out of necessity, to allow free access to the ARA-02 pipe that ran underneath it.

Resolution Comment: OK.

38. Appendix C, Page C-3

Comment: It would be useful to identify the sample numbers provided in the table with the site. For example, 5RA00101 Tank #2 Concrete is from ARA-02.

Resolution: The table title is "ARA-02 Summary Data (FY 2000)" thus, identifying the site. No further clarification is believed necessary.

Resolution Comment: OK.

39. Appendix D, Page D-7, Item 10

Comment: The sentence should state: "No soils contaminated since no leaks from the tank were identified." Please remove chain-of-custody forms from Item 10 and Item 13, since they are not applicable.

Resolution: The verbiage has been corrected and the references to chain-of-custody forms have been deleted from the verification location column for these two items.

Resolution Comment: OK.

40. Appendix F, General

Comment: Please provide information that links wastes from the sites with the manifest numbers.

Resolution: The wastes represented by the two certificates of disposal originated from the remediation of the ARA-02 site. A brief description has been added to Appendix F and a reference to the appendix added to Section 5.3.1, where the ARA-02 waste streams are discussed.

Resolution Comment: OK.